Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A server terminal configured to operate in a cluster on an ad hoc network backbone of an ad hoc network, comprising:

a user interface configured to transmit and receive communications during a call with a first terminal connected to an ad hoc network backbone; ~~and~~

a processor configured to support an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal, wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

2.   (Currently Amended) The server terminal of claim 1 wherein the processor is further configured to establish the same route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for [[a]] the first type of call, and to establish a different route for at least two of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for [[a]] the second type of call.

3.   (Original) The server terminal of claim 1 wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by constructing a network backbone topology map and selecting the established route based on information in the network backbone topology map.

4.   (Original) The server terminal of claim 3 wherein the processor is further configured to select the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the number of intermediary clusters between the second and third terminals along the selected established route for such transmission.

5.   (Original) The server terminal of claim 4 wherein the processor is further configured to select the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the energy of such transmission.

6.   (Previously Presented) The server terminal of claim 1 wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the third terminal to a primary route on the ad hoc network backbone to a first adjacent cluster and a secondary route on the ad hoc network backbone to a second adjacent cluster, and selecting the primary route or secondary route.

7.   (Currently Amended) The server terminal of claim 6 wherein the processor is further configured to select the primary route during [[a]] the first type of inter-cluster call, and select either the primary or secondary route during [[a]] the second type of call, the selection of the primary or secondary route being based on the loading of the ad hoc network backbone.

8.   (Original) The server terminal of claim 6 wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the first adjacent cluster to a first transmitting gateway and a master terminal for the first transmitting gateway, and mapping the secondary route to a second transmitting gateway and a master terminal for the second transmitting gateway.

9.   (Original) The server terminal of claim 8 wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by communicating with the master terminal mapped to the adjacent cluster corresponding to the selected one of the primary and secondary routes to support intra-cluster scheduling and forwarding of such communication packet from the second terminal to the transmitting gateway mapped to such corresponding adjacent cluster.

10.   (Original) The server terminal of claim 1 wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and received from the network backbone in response to a location request.

11.   (Previously Presented) The server terminal of claim 10 further comprising cache, and wherein the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and stored in the cache.

12.   (Currently Amended) A method of communications on a server terminal configured to operate in a cluster on an ad hoc network backbone, comprising:

transmitting and receiving communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network; ~~and~~

supporting an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal, <u>wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and</u>

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

13.　(Currently Amended) The method of claim 12 wherein the same route is established for each of the communication packets transmitted from the second terminal to the third terminal during the <u>first type of</u> inter-cluster call.

14.　(Currently Amended) The method of claim 12 wherein a different route is established for at least two of the communication packets transmitted from the second terminal to the third terminal during the <u>second type of</u> inter-cluster call.

15.　(Original) The method of claim 12 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by constructing a network backbone topology map and selecting the established route based on information in the network backbone topology map.

16.　(Original) The method of claim 15 wherein the established route is selected for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the number of intermediary clusters between the second and third terminals along the selected established route for such transmission.

17.　(Original) The method of claim 16 wherein the established route is selected for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the energy of such transmission.

18.　(Previously Presented) The method of claim 12 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the third terminal to a primary route on the ad hoc network backbone to a first adjacent cluster and a secondary route on the ad hoc network backbone to a second adjacent cluster, and selecting the primary route or secondary route.

19.　(Original) The method of claim 18 wherein the primary route is selected for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call.

20.   (Previously Presented) The method of claim 18 wherein the selection of the primary or secondary route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call is based on the loading of the ad hoc network backbone.

21.   (Original) The method of claim 18 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the first adjacent cluster to a first transmitting gateway and a master terminal for the first transmitting gateway, and mapping the secondary route to a second transmitting gateway and a master terminal for the second transmitting gateway.

22.   (Currently Amended) The method of claim 18 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by communicating with the master terminal mapped to the adjacent cluster corresponding to the selected one of the primary and secondary routes to support intra-cluster scheduling and forwarding of such communication packet from the second terminal to [[the]] a transmitting gateway mapped to such corresponding adjacent cluster.

23.   (Previously Presented) The method of claim 12 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, the method further comprising receiving the network address from the ad hoc network backbone in response to a location request.

24.   (Previously Presented) The method of claim 23 wherein the route is established for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, the method further comprising retrieving the network address stored in cache at the server terminal.

25.   (Currently Amended) A server terminal configured to operate in a cluster on an ad hoc network backbone, comprising:

means for a user to participate in a call with a first terminal connected to an ad hoc network backbone of an ad hoc network; ~~and~~

means for establishing a route on the ad hoc network backbone for each communication packet transmitted from a second terminal to a third terminal during an inter-cluster call, wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call: and

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

26.   (Currently Amended) A method of communications on a primary server terminal configured to serve a plurality of terminals in a cluster on an ad hoc network backbone, the method comprising:

using the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls;

dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol;

detecting a server terminal failure; ~~and~~

processing a message received from the ad hoc network backbone at the backup server terminal, the message being addressed to the primary server terminal;[[,]]

wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call: and

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

27.   (Previously Presented) The server terminal of claim 1 wherein the processor establishes a route on the ad hoc network backbone between an inter-cluster bridge terminal in a first cluster and an inter-cluster bridge terminal in a second network.

28.   (Previously Presented) The server terminal of claim 27 wherein the inter-cluster bridge terminals are Address, Location, and Route (ALR) servers.

29.   (Previously Presented) The method of claim 12 wherein establishing a route on the ad hoc network includes establishing a route between an inter-cluster bridge terminal in a first cluster and an inter-cluster bridge terminal in a second network.

30.   (Previously Presented) The method of claim 29 wherein establishing a route between an inter-cluster bridge terminal in the first cluster and an inter-cluster bridge terminal in the second network includes establishing a route between Address, Location, and Route (ALR) servers.

31.   (Currently Amended) At least one processor for communications on a server terminal configured to operate in a cluster on an ad hoc network backbone, comprising:

a first module for transmitting and receiving communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network; ~~and~~

a second module for supporting an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal, <u>wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and</u>

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

32.   (Currently Amended) A computer program product for communications on a server terminal configured to operate in a cluster on an ad hoc network backbone, comprising:

a computer-readable storage medium comprising<u>:</u>[[,]]

a first set of codes for causing a computer to transmit and to receive communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network; ~~and~~

a second set of codes for causing the computer to support an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal, wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

33.   (Currently Amended) At least one processor for communications on a primary server terminal configured to serve a plurality of terminals in a cluster on an ad hoc network backbone, comprising:

a first module for using the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls;

a second module for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol;

a third module for detecting a server terminal failure; ~~and~~

a fourth module for processing a message received from the ad hoc network backbone at the backup server terminal, the message being addressed to the primary server terminal, wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

34.   (Currently Amended) A computer program product for communications on a
primary server terminal configured to serve a plurality of terminals in a cluster on an ad hoc
network backbone, comprising:

a computer-readable storage medium comprising,

a first set of codes for causing a computer to use the primary server terminal to
support a plurality of inter-cluster calls for a number of the terminals in the cluster by
establishing a route on an ad hoc network backbone for each of the communication
packets transmitted by each of the terminals engaged in one of the inter-cluster calls;

a second set of codes for causing the computer to dynamically designate one of
the terminals in the cluster as a backup server terminal in accordance to an ad hoc
protocol;

a third set of codes for causing the computer to detect a server terminal failure;
~~and~~

a fourth set of codes for causing the computer to process a message received from
the ad hoc network backbone at the backup server terminal, the message being addressed
to the primary server terminal;[[,]]

<u>wherein the route on the ad hoc network backbone depends on whether the inter-
cluster call is a first type of call or a second type of call that is different from the first type
of call; and</u>

wherein the ad hoc network comprises two clusters, each cluster comprising at
least one member terminal slaved to a master terminal, and an inter-cluster link formed by
an intra-cluster bridge terminal that is a member of both clusters.

35.   (Currently Amended) An apparatus for communications on a primary server
terminal configured to serve a plurality of terminals in a cluster on an ad hoc network backbone,
comprising:

means for using the primary server terminal to support a plurality of inter-cluster calls for
a number of the terminals in the cluster by establishing a route on an ad hoc network backbone
for each of the communication packets transmitted by each of the terminals engaged in one of the
inter-cluster calls;

means for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol;

means for detecting a server terminal failure; ~~and~~

means for processing a message received from the ad hoc network backbone at the backup server terminal, the message being addressed to the primary server terminal, <u>wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and</u>

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

36.   (Currently Amended) A ~~method of~~ terminal system for communications ~~on a primary server terminal configured to serve a plurality of terminals in a cluster on an ad hoc network backbone, the method~~ comprising:

a primary server terminal used to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls; ~~and~~

a processor for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol, for detecting a server terminal failure, and for processing a message received from the ad hoc network backbone at the backup server terminal, the message being addressed to the primary server terminal, <u>wherein the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call or a second type of call that is different from the first type of call; and</u>

wherein the ad hoc network comprises two clusters, each cluster comprising at least one member terminal slaved to a master terminal, and an inter-cluster link formed by an intra-cluster bridge terminal that is a member of both clusters.

37.   (Previously Presented) The at least one processor of claim 31 wherein the second module establishes a route on the ad hoc network backbone between an inter-cluster bridge terminal in a first cluster and an inter-cluster bridge terminal in a second network.

38.   (Previously Presented) The at least one processor of claim 37 wherein the inter-cluster bridge terminals are Address, Location, and Route (ALR) servers.

39.   (Previously Presented) The at least one processor of claim 31 wherein the second module is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the third terminal to a primary route on the ad hoc network backbone to a first adjacent cluster and a secondary route on the ad hoc network backbone to a second adjacent cluster, and selecting the primary route or secondary route.

40.   (Currently Amended) The at least one processor of claim 39 wherein the second module is further configured to select the primary route during [[a]] the first type of inter-cluster call, and select either the primary or secondary route during [[a]] the second type of call, the selection of the primary or secondary route being based on the loading of the ad hoc network backbone.

41.   (Previously Presented) The at least one processor of claim 39 wherein the second module is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the first adjacent cluster to a first transmitting gateway and a master terminal for the first transmitting gateway, and mapping the secondary route to a second transmitting gateway and a master terminal for the second transmitting gateway.

42.   (Previously Presented) The at least one processor of claim 41 wherein the second module is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by communicating with the master terminal mapped to the adjacent cluster corresponding to the

selected one of the primary and secondary routes to support intra-cluster scheduling and forwarding of such communication packet from the second terminal to the transmitting gateway mapped to such corresponding adjacent cluster.